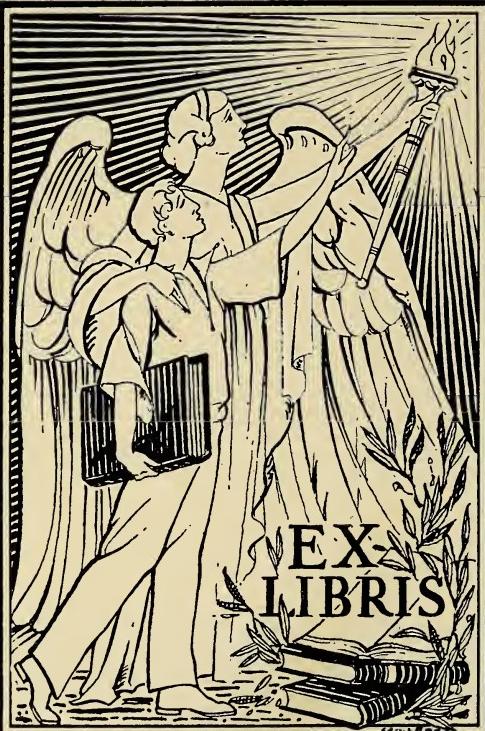


✓ Hereditary Blindness and the Howe Laboratory.

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## HEREDITARY BLINDNESS AND THE HOWE LABORATORY.

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"And his disciples asked him, saying, Master, who did sin, this man, or his parents, that he was born blind?"—St. John 9:2.

People have always been interested in the causes of blindness, and they have usually pointed their fingers in the direction of the blind person and his parents when they asked the question, "Who did sin?" Few to-day realize that human society itself is guilty of long neglecting to remedy those causes of blindness which are preventable.

For many centuries society was content to cast its stray farthings to the blind, feeling that this action constituted high philanthropy. They felt toward the blind no duty and no responsibility. Later, a certain sense of sympathy began to waken in the minds of men, and handicapped persons of all types were crowded together in squalid almshouses merely to prevent their starvation. When adequate homes for the adult blind made their appearance, society felt that it had banished the whole problem of blindness. The public at large ceased to encounter the blind upon the streets and forgot that they existed.

However, a few keen-minded men, such as Dr. Lucien Howe, felt that it was the duty of society not only to educate and care for the blind, but also to prevent blindness wherever possible. And every friend of the blind knows how the efforts of such men in passing silver-nitrate laws

have resulted in a phenomenal reduction of blindness of the new-born.

Societies were formed to prevent blindness through sanitary and medical measures as well as through sight-saving classes. The 1932 Directory of Activities for the Blind lists, under Prevention of Blindness, sixty-two American Organizations, Local, State, and National, some of which boast a number of sub-divisions. Marvelous has been the achievement of these organizations in the several fields in which they have chosen to engage themselves.

Yet society has not atoned for all its negligence toward the blind. One of the remaining neglects of society is that it has never thoroughly and systematically studied the rôle of heredity as a cause of blindness, whereas possibly as high as a fourth, and undoubtedly more than a tenth, of the students now attending schools for the blind in the United States are blind from this cause alone.

But far worse than this is the fact that society has not made known to the blind the information already available concerning the hereditary nature of certain types of blindness. So far as I am aware, not one of the sixty-two American organizations interested in prevention of blindness has yet included prevention of blindness due to heredity as a definite part of its program.

At State Schools for the Blind one might expect to find a universally favorable attitude toward the study and prevention of hereditary blindness. But such is not the case. The majority of Schools for the Blind will not answer questionnaires upon the subject. Some are "too busy" to coöperate in such studies of heredity among their pupils. Some schools have no consultant Ophthalmologist, and, for this reason, many of

\* The opinions expressed in this paper are those of the author and are not to be taken as representing the attitude of the Medical School or of its members.

The best public almshouses, and the best state and private training schools, have for their main function the rehabilitation of border-line cases. Socially and economically this is correct and splendid, but such personal rehabilitation should not and need not be accomplished at the expense of eugenical standards.

#### MORON MARRIAGE.

Training schools for the high-grade feeble-minded strive very hard to prepare their inmates for living in society at large as self-sustaining and self-controlled members. Naturally many such institutions consider the marriage of their border-line defectives as an essential part of their attempted rehabilitation.

Recently an inquiry like the following was made to the EUGENICAL NEWS.

1. Review actual cases of mental defectives who have married.

2. The proportion of these marriages which have been successful. (Any details will be helpful.)

3. The cause of failures among those which have not been successful.

In answer, the EUGENICAL NEWS could only state that in such places as the archives of the Eugenics Record Office, and in the research department of the Training School at Vineland, New Jersey, there are records of a great many persons of low-grade mentality—moronic and feeble-minded—who have become parents—many of them illegitimately; but, also of many definitely feeble-minded individuals who have married legally and reared families. In general, even if unaided economically, the moron-normal marriage is able to scratch out a bare living, its chance of producing children of average intelligence is very low; and even if a child of the first generation from such a mating seems up to par, even then the liability of degen-

eracy again cropping out in subsequent generations is very great.

Of course, neither economically nor eugenically should there be any reproduction by defectives, which have been bolstered-up to a socially useful and economically self-sustaining existence, nor by any stocks which produce such individuals. Sterilization is the surest and sanest eugenical treatment for the feeble-minded, and for those strains which produce feeble-minded individuals in high frequency.

There are, of course, cases of individuals who, through some injury or disease, fail to make normal mental development, and who still carry sound hereditary traits. Eugenically there is no reason why such individuals should not marry, although practically, of course, there are generally a great many. The point is to differentiate between the individual whose mental backwardness is definitely due to injury or an acquired disease, and the individual whose feeble-mindedness is constitutional and hereditary.

Bolstering up feeble-minded individuals for marriage with the intent to have children, is about the most uneugenical and uncharitable thing which any charitable institution could possibly do.

Sometimes complaint has been made against civilization as a whole that it bolsters up weaklings for breeding-stock instead of eliminating the weaklings radically, as a harsher civilization would do, and breeding from the best. There is, of course, no reason why civilization should not take in hand its own eugenical future. It is entirely within the range of applied eugenics for a nation to set its own ideals in race-biology, and to breed toward them much more effectively and humanely than natural selection or harsh civilization has ever done.

*their students have no recorded diagnosis!* A few are definitely against an investigation of the heredity of their pupils.

But fortunately, the more progressive schools are enthusiastic and highly coöperative in this work, going far out of their way to collect the necessary raw data. And it will be in a large measure due to their coöperation that an accurate analysis of the problem will be obtained.

From his fifty years of experience as a practicing ophthalmologist, Dr. Howe was so convinced of the importance of heredity as a factor in the production of blindness, that when the Howe Laboratory of Ophthalmology was presented to the Harvard Medical School, he insisted that one of the three projects to which it should be devoted was the study of hereditary factors affecting the eyes, with a view to eliminating blindness due to inheritance. Accordingly, the Howe Laboratory, through its Section on Heredity, is now endeavoring to collect and analyze data upon the hereditary factors involved in the production of blindness.

It is true that only a laborious collection and analysis of facts concerning accidents, diseases, environment, and heredity of thousands of visually handicapped persons will reveal the truth in all its details, and yet a glance at the present meagre statistics from Associations and Schools for the Blind will convince the student of heredity of the promise of such a thoroughgoing investigation of heredity as a cause of blindness.

The list of diagnoses at almost any school for the blind will show Congenital Cataract and Optic Atrophy at the head of the list. Glaucoma is added to these two outstanding conditions in registers of the adult blind. These facts do not appear strange to the student of heredity because he knows that Congenital Cataract,

Optic Atrophy, and Glaucoma are strongly heritable and usually transmitted as dominant unit-characters. This means that if a person has received one of these characters through heredity, he will probably transmit it to half of his children. Let us cite several examples. We have collected a pedigree in which one New England woman suffering from Congenital Cataract was responsible for bringing into the world six blind children, nine blind grandchildren, and six blind great-grandchildren—in all, twenty-one blind descendants, as shown in Pedigree No. 1. A blind girl of the fourth generation of this family, married into the third generation of another cataractous family shown to the left of the pedigree. In this family a blind man passed his blindness on to two children, three grandchildren, and a great-grandchild—six blind descendants in all.

A blind man from Missouri is one of fifteen relatives having a common origin, all suffering from Congenital Cataract. He produced six blind children and may still sire others because he is now only fifty-two years of age. This family is represented in Pedigree No. 2.

A Pennsylvanian suffered from Congenital Cataract and, according to our records, gave rise to three blind children, eight blind grandchildren and seven blind great-grandchildren, or a total of eighteen blind descendants, as will be seen in Pedigree No. 3.

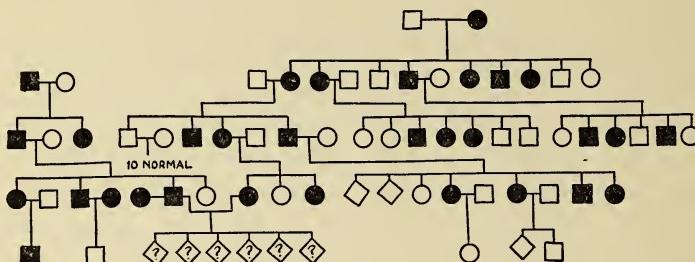
Another Cataractous Pennsylvanian gave rise to a son blind from Congenital Cataract, four cataractous grandchildren, two cataractous great-grandchildren and a cataractous great-great-grandchild, or a total of eight blind descendants, as shown in Pedigree No. 4.

Had the five progenitors of these cataract pedigrees been restrained from reproduction, the lives of sixty-eight blind

persons would have been prevented. And to prevent the birth of one such blind person is a far greater humanitarian deed than instilling drops of silver-nitrate into the eyes of a potential case of *Ophthalmia neonatorum*, because it eliminates the defect for all future generations.

can not know which couples carry the trait until after a blind child is born, *all couples producing a child bearing a recessive type of blindness should refrain from further reproduction.* But how shall we achieve this goal?

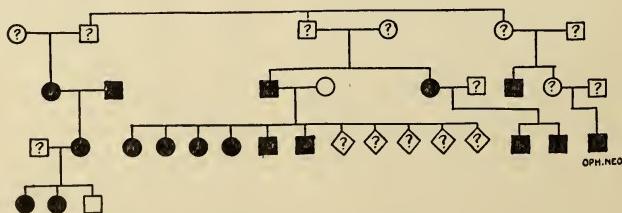
The Hitlerian dictatorship, with one



## **FAMILY 1—NEW ENGLAND**

Here, then, is the problem of Hereditary Blindness, which we may state as follows: *There are certain persons in the population who, if they reproduce, are bound by the laws of heredity to produce blind children.* These transmitters may be affected individuals, as in the case of dominant characters such as congenital cataract, or they may be normal appearing individuals, as is the case with recessive characters such as albinism.

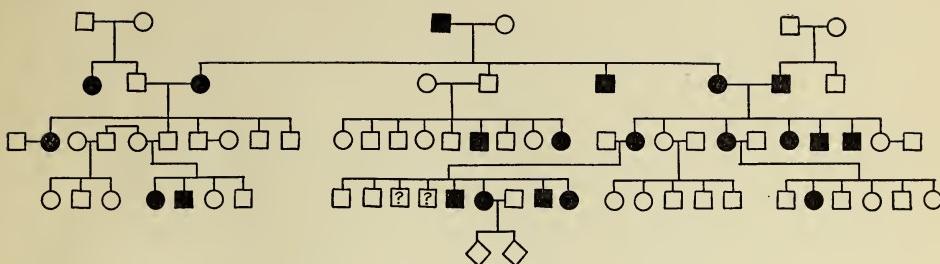
stroke, solved this problem for Germany by its National Sterilization Law. Doubtless this is a highly effective method of dealing with the problem and would find many protagonists in America. Yet it is an unsavory statute, indeed, that classes intelligent blind with criminals, idiots, and syphilitics. Furthermore, no American dictatorship is likely to consider such a law seriously in the immediate future. If this is a problem which must eventually



#### **FAMILY 2 - MISSOURI**

The remedy is, obviously, that those persons who exhibit dominant hereditary types of defect producing blindness should refrain from all reproduction. And because, in the case of recessive types, we

find its solution in legal statutes, let us not allow it to become the plaything of blatant agitators or militant propagandists. We believe that the appropriate laws can be passed without injecting into it the "Na-



### FAMILY 3 — PENNSYLVANIA

tional Crisis" element which eventually taints so many worthy reforms and attracts political meddlers.

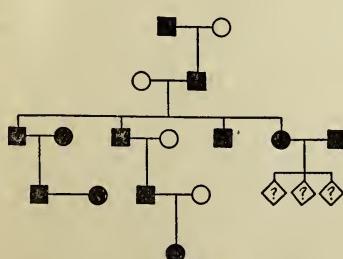
The Howe Laboratory, as a research institution of Harvard University, is not permitted to indulge in propaganda of any sort, nor do we feel that it should, even in connection with the solution of this social problem upon which its researches have such a great bearing. The results of our investigations, including pedigrees of families studied, will be published and distributed to Schools and Associations for the Blind as well as to organizations having merely a scientific interest in these facts.

It is hoped that, through these agencies, our information upon the heredity of blindness will reach the blind concerned. It is hoped that our reports in the Libraries of Schools for the Blind will be made

the facts and apply them to their own cases. It is hoped that the upper classes in such schools will organize Societies for the Prevention of Hereditary Blindness which will demand that they be informed in their Biology Courses, to the end that *no student may graduate from a School for the Blind unaware of the danger of transmitting hereditary types of blindness.*

If it is found that the adverse sentiment of the educated Blind World does not restrain from reproduction certain blind persons not amenable to reason, we hope that the organized blind will take matters into their own hands, circulate their own petitions, and present them to their own State Legislatures; because the failure or retardation of well-meaning legal proposals is frequently due to the suspicion that one group is trying to restrict the activities of another group. The passage of statutes relating to a particular group can best be obtained when they are proposed by the group which will be affected by the new law. Neither the blind themselves nor friends of the blind wish to have unsympathetic seeing persons pass laws to govern their conduct.

*We wish to make it clear that we do not believe in prohibiting by law the marriage of persons blind through heredity, provided these persons are surgically sterilized. For we do believe in making the*



### FAMILY 4 — PENNSYLVANIA

available to Blind Students who will read

lives of the blind as normal and as happy as possible. If blind persons wish to adopt children, we heartily approve, provided they have the means to support their adopted children adequately.

Should the blind, after knowing the facts of Hereditary Blindness, refuse to restrict the reproduction of blind by their group, and should they fail to propose laws to prevent such reproduction, then it would be the duty of society to deal with the problem. Should society neither investigate nor make known the facts to those blinded through heredity, then is society to blame for this neglect.

*If a blind person, unaware of the facts, passes on his blindness through heredity, it is a tragedy; but if he transmits his blindness while fully cognizant of the danger, his act is little less than a criminal offense.*

Let us see to it that fingers can be pointed neither to society nor to the blind themselves when the question is asked, "Who did sin, that this man was born blind?"

#### AN INVESTIGATION OF SOME INDIAN TRIBES IN MEXICO.

The Italian Committee for the study of population problems carried on during the last months of 1933 the investigation in Mexico that was announced in the September-October, 1933, number of the EUGENICAL NEWS.

The investigation has been conducted under the personal direction of Prof. Corrado Gini, President of the Italian Com-

Very little anthropological work has been done on the Indians of Mexico, and judging from the above account, anthropologists will be eager to receive the completed report of Prof. Gini.—Ed.

mittee and chief of Statistical Department of the University of Rome, assisted by an Italian staff consisting of Prof. Giuseppe Genna, a member of the Anthropological Department of the University of Rome; of Dr. Dino Camavitto, a member of the Department of Sociology of the above mentioned University, and of Miss Fausta Marzi as Secretary.

The Mexican Government assisted by putting at the disposal of Prof. Gini a generous number of Mexican students, chosen from the personnel of the different Departments.

The investigation was carried on in connection with other inquiries on isolated populations either already made or planned by the Italian Committee. Its first purpose was to make a thorough study of as pure as possible groups of the Indian populations. In order to do this the expedition chose groups living in regions where the geographical conditions, the historical evidence and the cultural manifestations led to the conclusion that the infiltration of white blood was insignificant. Thus the following groups were selected as objects of study: the Otomis of some remote localities of the district of Ixmiquilpan (Hidalgo), the Aztecs of Tuxpan (Jalisco), the Seri of the Island of Tiburon (Sonora), the Tarascos of the Island of Janitzio (Michoacan), the Coras and the Huicholes of the Sierra Nayarita (Nayarit) and Colotlan (Jalisco), the Tlapanechos of Tlacuapa and Huehuetepetec (Guerrero), the Chinantecos of Yolox, the Zapotecos of Atepec and the Mixes of Villalta (Oaxaca). At the same time the results of crossings of these populations with the white race and in one case with the negro, was studied.

The personnel of the expedition was divided into four groups. Each group worked along the same lines, collecting

